ABSTRACT OF THE DISCLOSURE

An alpha-amylase enzyme obtained from Bacillus acidocaldarius species is utilized to liquefy starch at a pH as low as 3.0 without the need to add thermostabilizing agents such as calcium. The alpha-amylase produces acceptable DE yields in a single liquefaction step and does not need to be inactivated prior to conducting saccharification which can proceed without adjustment of the pH of the liquefact. Alternatively, a secondary liquefaction process can be utilized, in which case two additions of the alpha-amylase are used resulting in a combined low dosage of the enzyme.